Book 1

Mastering Mathematical Reasoning

Selective and Scholarship Tests

- Improves problem solving abilities
- Helps comprehension and application of mathematical reasoning
- Develops critical thinking to understand mathematics in a more meaningful way

A
FIVE SENSES
PUBLICATION

Yvonne Kang

SAMPLE

Contents

Instructions v

Test 1 1

Test 2 21

Test 3 42

Test 4 63

Solutions 83

Notes 98

SAMPLE

© Yvonne Kang © Five Senses Education Pty Ltd

Test 1

1. Stephanie earns $20 per hour on weekdays, $30 per hour on Saturdays and $40 per hour on Sundays.

   The table below lists the hours she worked on each day of one week.

Day	Number of hours worked
Monday	4
Tuesday	2
Wednesday	8
Thursday	10
Friday	3
Saturday	5
Sunday	2

   How much money did Stephanie earn that week?

   A $560

   B $660

   C $770

   D $1020

   E $1540

2. Reena multiplies the smallest four-digit whole number by the largest three-digit whole number.

   What is the answer?

   A 99 000

   B 99 990

   C 990 000

   D 999 000

   E 999 999

SAMPLE

© Yvonne Kang © Five Senses Education Pty Ltd

3. Office regulations say the gap between the desks should be at least 900 mm to allow for wheelchair users.

   Each desk has a length of 2 m and a width of 1 m.

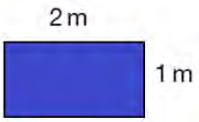


Diagram **NOT** accurately drawn

   Six of these desks are arranged as shown in the diagram below.

   The gap between each desk is 900 mm.

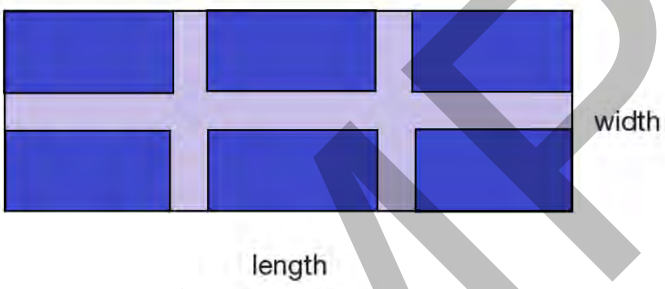


Diagram **NOT** accurately drawn

   What is the perimeter of the area above for 6 desks, including the spaces between?

A 10.5 m

B 10.7 m

C 11.4 m

D 15.5 m

E 21.4 m

SAMPLE

© Yvonne Kang © Five Senses Education Pty Ltd

4. Sandra and James each think of a different whole number that is greater than 0 and less than 50. Sandra's number is a multiple of 4.

   James' number is an even number which is a multiple of 9.

   What is the difference between the largest possible value of Sandra's number and the smallest possible value of James' number?

   A 39

   B 38

   C 36

   D 34

   E 30

5. Brian has some jars of salt. The jars come in three sizes.



   Brian has at least one of each size of jar and all his jars are full.

   Altogether he has 1.4 kilograms of salt in the jars.

   How many jars does he have?

   A 4

   B 5

   C 6

   D 7

   E 8

SAMPLE

Solutions

TEST 1

1. **C**: Mon – Fri: 27 hours × $20 = $540
   Saturday: 5 hours × $30 = $150
   Sunday: 2 hours × $40 = $80
   The total = $540 + $150 + $80 = $770
2. **D**: 999 × 1000 = 999 000
3. **E**: The length = 3 × 2 m + 0.9 m × 2 = 7.8 m
   Width of the area = 2 × 1 m + 0.9 m = 2.9 m
   The perimeter = 7. 8 + 7.8 + 2.9 + 2.9 = 21.4 m
4. **E**: Sandra's largest possible number = 48
   James' smallest possible number = 18
   48 – 18 = 30
5. **D**: 5 × 200g, 1 × 175g, 1 × 225g or 2 × 175g, 2 × 225g, 3 × 200g or 7 × 200g
6. **D**: 8 cartons × 12 packets × 10 legs = 960 legs
   960 ÷ 3 = 320 meals.
7. **E**: 760 g is 7.6 times of 100 grams.
   Number of chocolate chips used for 760 grams = 7.6 × 20 = 152
8. **D**: Statement 1: True
   Austria is 1 hour ahead of England so when it's 4 pm in Austria it is 3 pm in England.
   Statement 2: True
   Samoa is 11 hours ahead of England, so when it's 4 am in Samoa, it is 5 pm in England.
   Statement 3: False
   Tanzania is 9 hours ahead of Honduras, so when it's 4 pm in Honduras it is 1 am the next morning in Tanzania.
9. **C**: 60 bottles = 20 times of 3 bottles.
   2 × 20 = 40.
10. **D**: A quadrilateral is a shape with four sides.
    Quadrilaterals: A, B, C, D, E
    Shape F has five sides so it is not a quadrilateral.
11. **D**: X + Y is the number of employees who work in Stocker and Checker section.
    Z represents the number of employees who work in Checker and Deli section but not in Stocker section. It does not represent everyone who does not work in Stocker section.

SAMPLE

© Yvonne Kang © Five Senses Education Pty Ltd 2021